BOTECH LTD.

BT-100 HD

HD(High Definition)

Common Interface Embedded Satellite Receiver

User Manual

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Notice

Read this manual carefully and make sure you understand the provided instructions. For your safety, check what the result each action will be.

Warnings, Cautions and Notes

Throughout he whole manual, pay special attention to the following marks that indicate hazardous situations.

Caution
Indicates a situation which, if not avoided, could damage the equipment or apparatus.

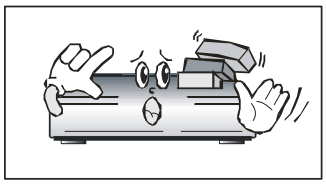
Warnings
Indicates a hazardous situation which, if not avoided, could result in serious injury.

Note
Indicates additional information to the user to make the user aware of possible problems and information of any importance to help the user to understand, to use and to maintain the installation.

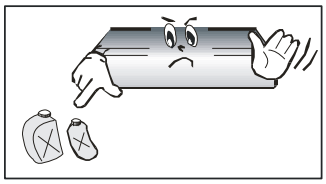
Safety Information

This digital satellite receiver has been manufactured to comply with international safety standards. Please read the following safety precautions carefully.

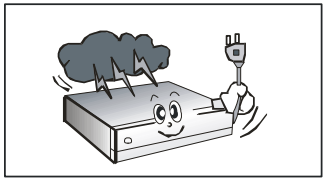
Safety Instructions and Precautions



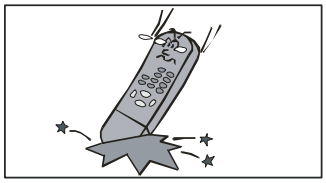
Avoid placing heavy things and blocking ventilation passage.
(Passage blocking can cause fire)



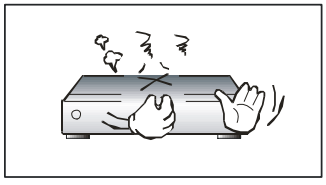
Avoid scrubbing the surface with Benzene or Volatile gasoline. Color can be damaged.



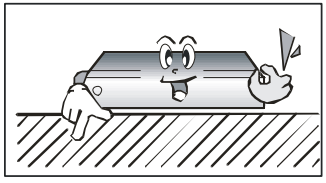
Leave the power and the antenna off for the ling absence or during thunder storm.



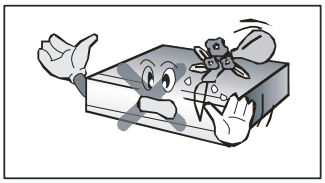
Avoid dropping and damaging Remote Control Unit.



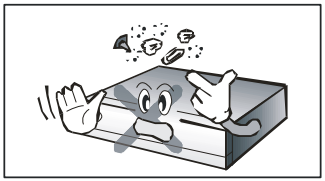
If there is smoke or burning smell, turn off & un-plug the set immediately. Contact your local repair center for advice.



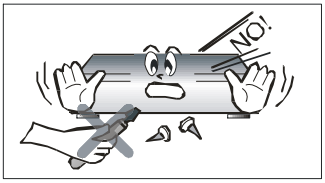
Avoid place the set on slippery and slant surface.



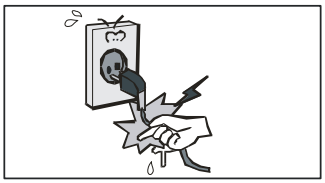
Keep away from the water.



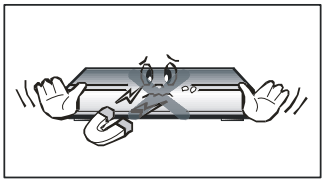
Clear off the dust. Dust or Metallic particles inside the set can cause fire and electric shock.



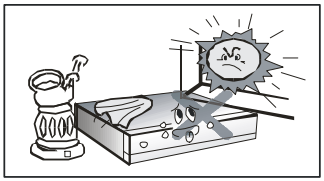
Avoid dissembling and assembling. Do not open the set.



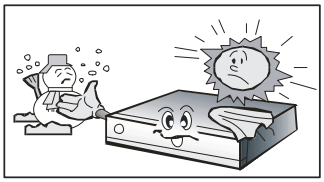
Do not snatch the cable to plug out.
Do not move the set while power cord is plugged in.



Keep the distance from Magnetic items and Audio Speaker.



Place the set with the good ventilation and away from the direct sunlight and humidity.



Avoid the temperature of over 30C and below 5C.

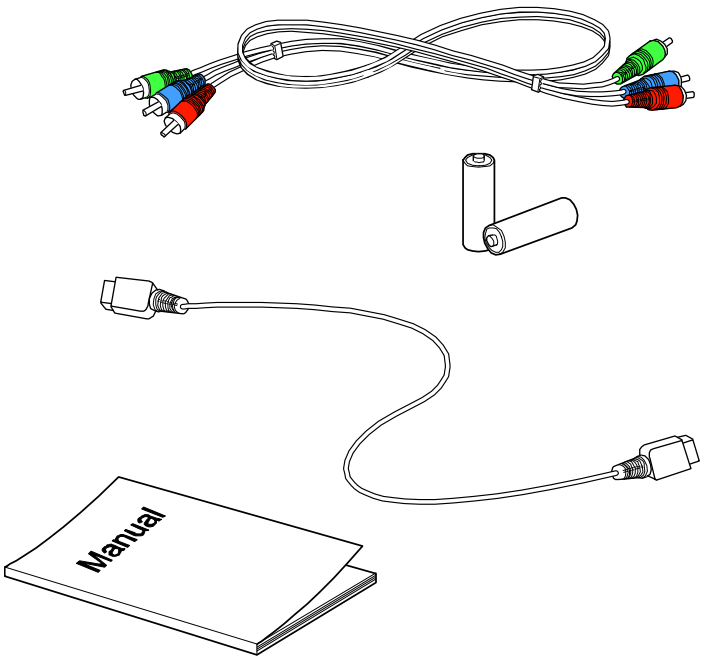
1 Before You Begin

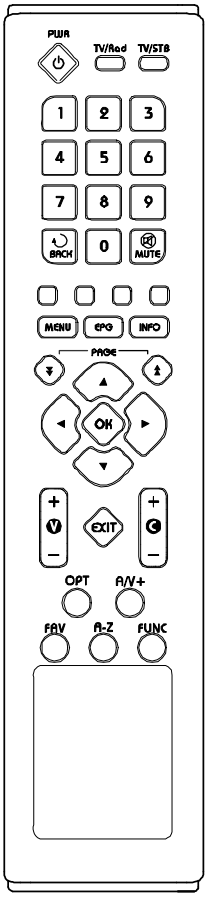
1.1 Features

- Brilliant On Screen Graphic
- MPEG-2 & MPEG-4 Fully DVB Compliant
- MPEG-2 Video (MP@ML), MPEG-1 Audio Layer1,Layer2
- LNB Controlling Logic
- SCPC/MCPC Receivable from C / Ku-Band Satellites
- Digital Tuner with Loop-through
- HDMI, Component, RGB/HV, S-Video, Composite Video, Audio L/R
- Wide Symbol Rate 1~45Mbps & Frequency Input 950 ~ 2150MHz
- DiSEqC 1.2 Supported
- S/PDIF AC3 Audio
- User friendly OSD Menu with Full Function
- 256 Color Graphic User Interface
- Multi-language menu
- 4-digit 7-segment LED Display
- Variable Aspect Ratio (4.3, 16:9) with Pan Vector or Letter Box
- EPG(Electronic Program Guide) for On-screen Channel Information
- Teletext and Subtitle Supported (VBI & OSD)
- Installation by Easy Setup Guide
- Capacity for Storing Multi Channel (FTA.2500 Channels, 500 Transponders)
- Favorite Channel and Parental Lock Function
- RS232C Port for Upgrading System Software
- Input Frequency 51~862 Mhz
- Implement complet DVB-T (ETS 300 744) standard
- 2K and 8K transmission modes
- No=Hierarchial and Hierarchial support
- Optimized for both SFN and MFN enviroment

1.2 Accessories

- Component video cable
- HDMI cable
- Operating instruction (this Manual)
- Remote Control
- AAA dry cell batteries x 2



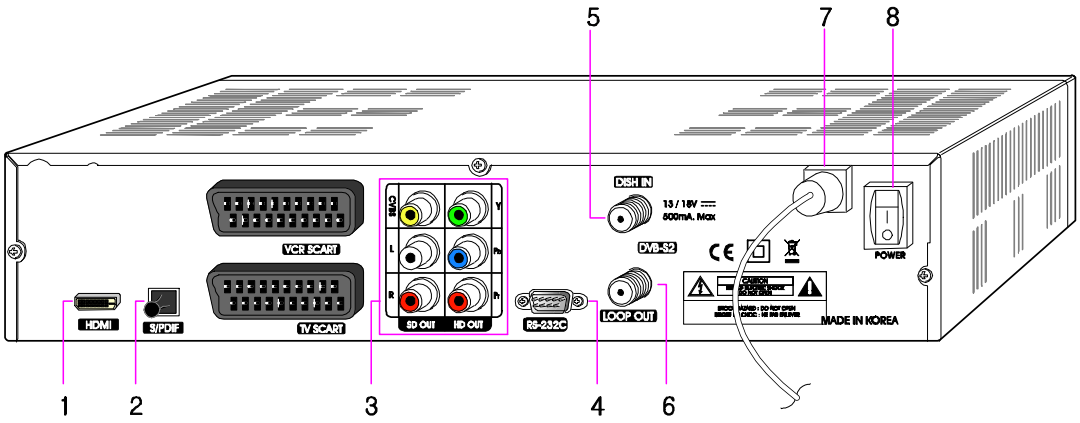


2 Controls and Functions

2.1 Front Panel

Item	Description
1. Power Button	Turns the receiver On/Off.
2 Menu/OK Button	Shows the Main menu in viewing mode. Activates the highlighted menu item in menu mode.
3. EXIT Button	Exit from the current menu or cancels the current progressing operation if applicable.
4. CH Up/Down Buttons (▲/▼)	Changes channels in viewing mode and moves the cursor up/down in menu mode.
5. Volume Up/Down Buttons (□/□)	Increases/ decreases the volume levels in viewing mode and changes settings in menu mode.
7. Display (4-digit 7-segment)	4-digit display of channel information. The red LED is the STAND BY indicator.

2.2 Rear Panel



Item	Description
1. HDMI	Connect HDMI input of TV or PC monitor.
2. S/PDIF	Output for connection to a digital amplifier.
3. CVBS OUT	Using standard video cables, these jacks connect CVBS(Yellow).
Stereo Audio OUT	Using standard stereo audio cables, these jacks connect L/R(White, Red).
YPbPr OUT	Using standard A/V cables, these jacks connect Y/Pb/Pr(Green, Blue, Red) HD component video input.
4. RS-232C	Connects to a Set-top box or a PC serial port.
5. DISH IN 13/18(14/19)V 500mA Max	Connect the satellite dish.
6. LOOP OUT	Loop Out is a output port of the DISH IN signal.
7. Electric Inlet Lead	90~240V AC(Auto-selectable), 50~60Hz. Make sure to check the power specification.
8. Power Cord	AC Power Switch.

2.3 Remote Control Unit

All receiver features can be controlled with the remote controller.

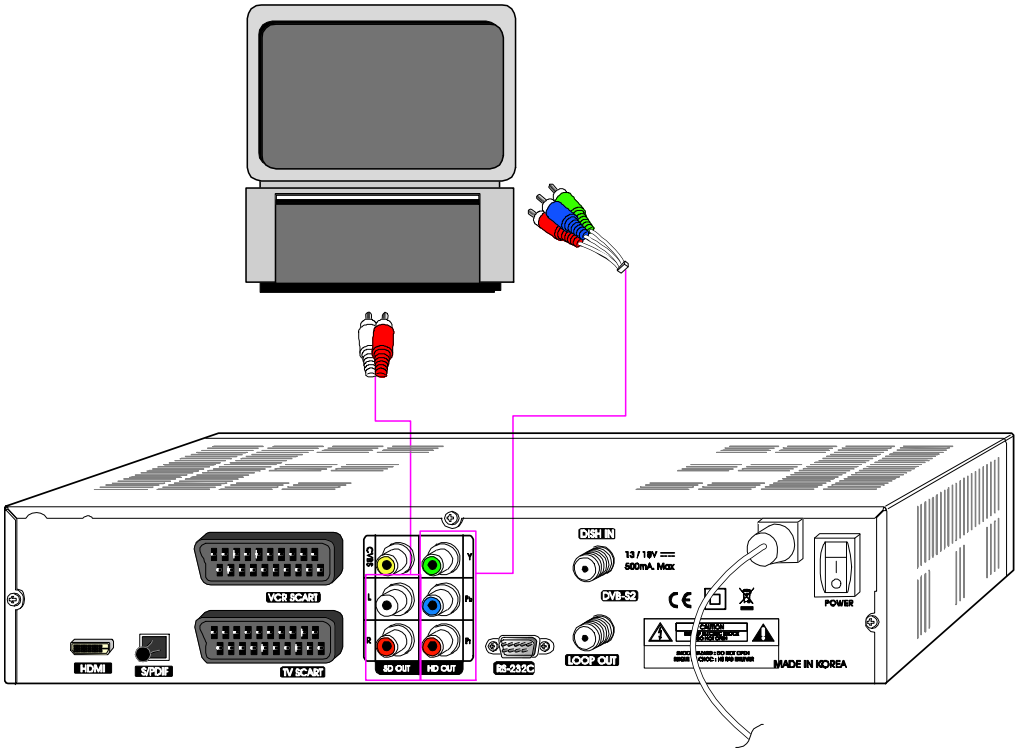
Button	Description
1. POWER	Turns the unit On and Off.
TV/STB	Switches between TV and STB.
TV	Mode indicator : Indicates operational mode of remote control.
VCR	
DVD	
STB	
2. NUMERIC Buttons (0~9)	Chooses channels and enters prodramming information.
BACK	Move to the previous channel.
TV/RAD	Switches between TV and Radio.
3. MENU	Display the main menu of the receiver and come out from inner level to viewing mode(Exit all).
EPG	Shows the TV/Radio Channel guide.
INFO	Shows the information of the Banner and EPG.

EXIT	Removes all on-screen displays and returns to TV viewing from any menu.
4. □/□ (/)	Moves left/right or change settings in menu mode. Changes channels in viewing mode.
▲/▼ (/)	Moves up/down in menu mode.
OK()	Confirms the choices and/or selections the highlighted menu item. While watching TV or listening to Radio, press the button and the channel list will appear.
A-Z	Sort the channels automatically in alphabetical order.
MUTE	Turns the sound on/off.
5. V+/-	Changes the volume level in viewing mode.
CH+/-	Changes channels in viewing mode.
P+/-	Selects other menu pages with sub-pages.
6. ()	Select the option such as Audio Language, Teletext Language and Subtitle Language.
()	Select video mode (4:3, 4:3 Letter Box, 16:9) and audio mode (Left, Right, Stereo, Joint).
()	Select the group of satellite or favorite.
()	Selects the new features such as Zooming, Multi picture.
7. OPT	Select the option such as Audio Language, Teletext Language and Subtitle Language.
A/V+	Select video mode (4:3, 4:3 Letter Box, 16:9) and audio mode (Left, Right, Stereo, Joint).
FAV	Select the group of satellite or favorite.
FUNC	Selects the new features such as Zooming, Multi picture.

3. Connections

3.1 Connecting to TV

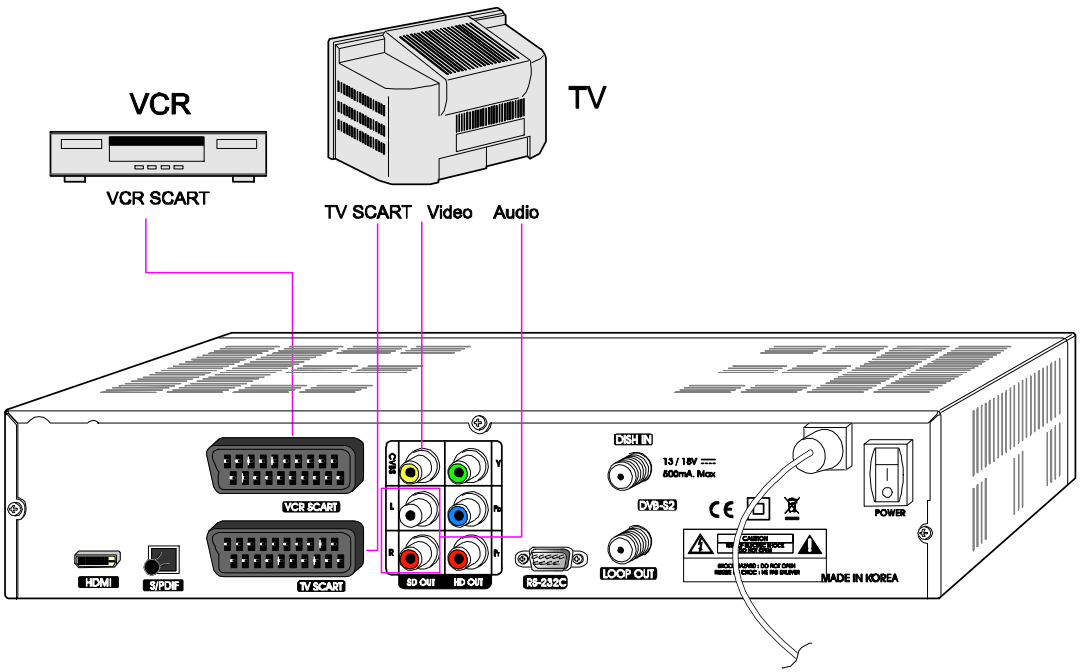
<Connecting to digital TV which can support HD resolution (1080i,720p480p&480i) using YPbPr port>



1. Connect STB's YPbPr OUT and audio L/R OUT to YPbPr IN and audio L/R IN of TV.

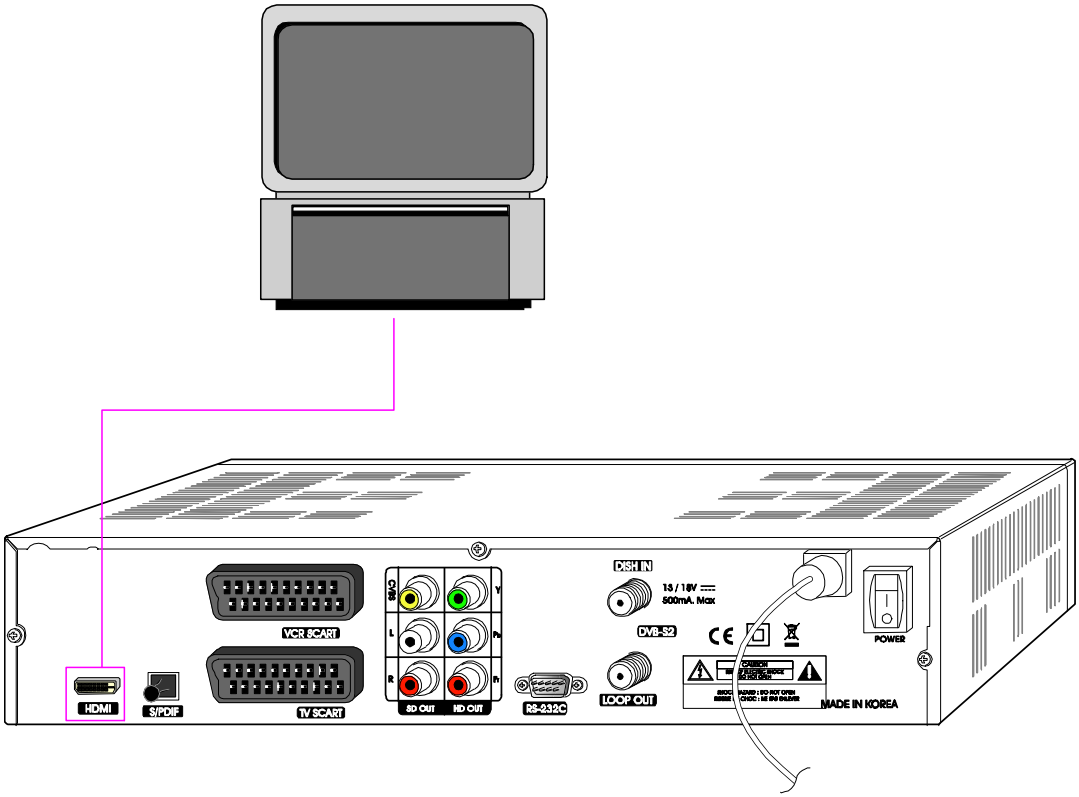
2. Set STB's video output mode to 1080i or 720p or 480p using 'FUNC' key of remote controller.
   Please check TV's user manual for detail connecting method of the YPbPr input port.

<Receiver to TV and VCR with SCART Cables >



1. Connect the Video and Audio of TV to the Video and Audio. Connect Red and White connector to Audio R and Audio L, and Yellow to Video port respectively.
2. Connect the TV SCART of TV to lower SCART connector with fully featured SCART cable.
3. Connect the VCR SCART of VCR to upper SCART connector with fully featured SCART cable.
4. Go to section 3.2, Connecting to Dish, then connect your dish.

<Connecting to PC monitor or digital TV which has HDMI input port>

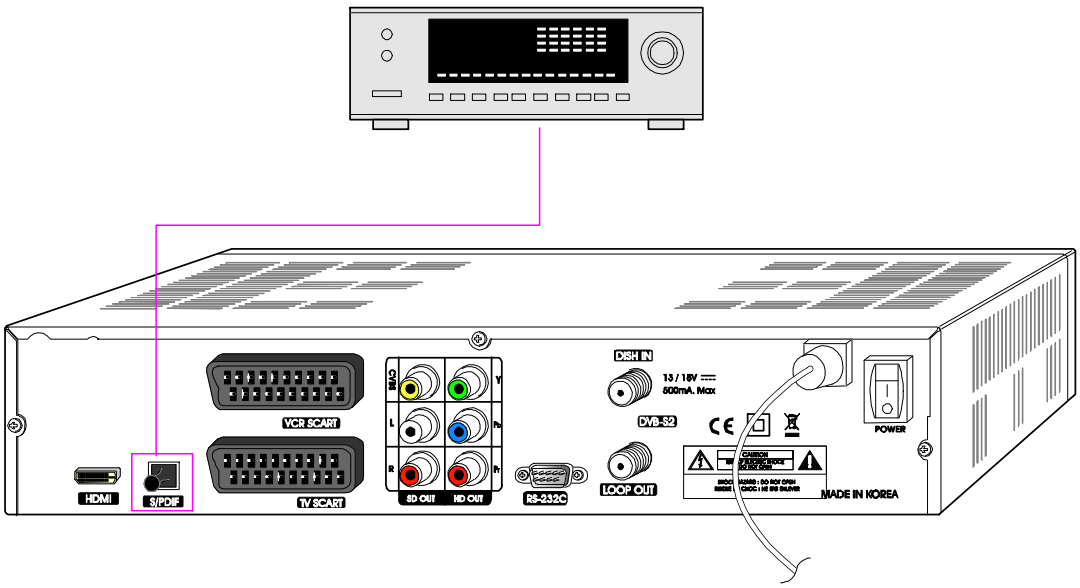


1. Connect STB's HDMI OUT to HDMI IN of monitor or TV.

2. Set STB's video output mode to 1080i or 720p or 480p using 'FUNC' key of remote controller.

For the best access to HD programming at the highest available resolution, use this connection method.

<Connecting to A/V receiver (Dolby digital amplifier)>



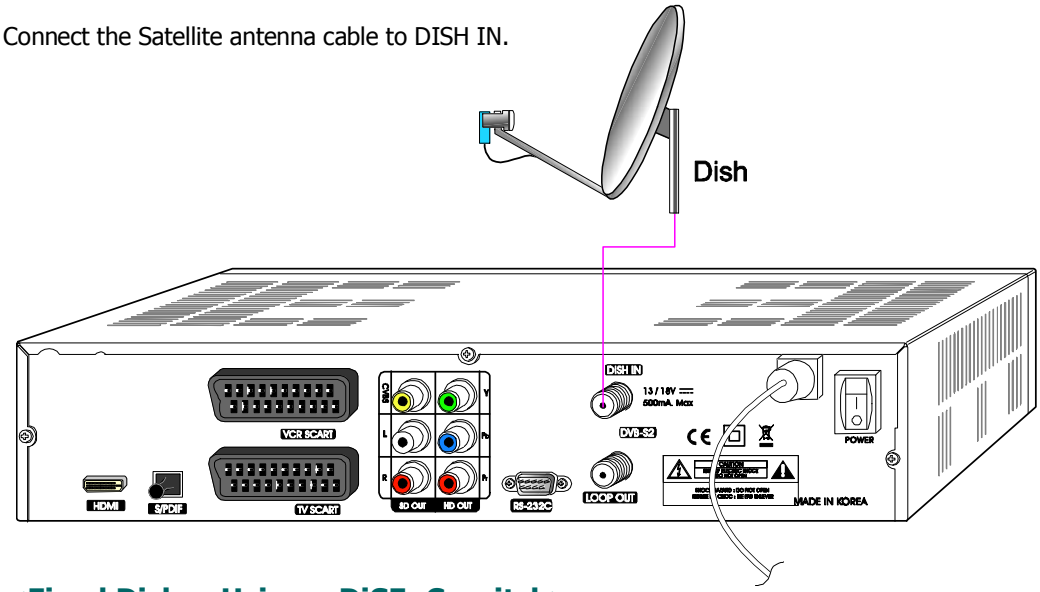
1. Connect STB's optical digital audio out to A/V receiver.

2. Go to TV Output menu and set "Dolby Digital(DD)" to enable.

3.2 Connecting to Dish

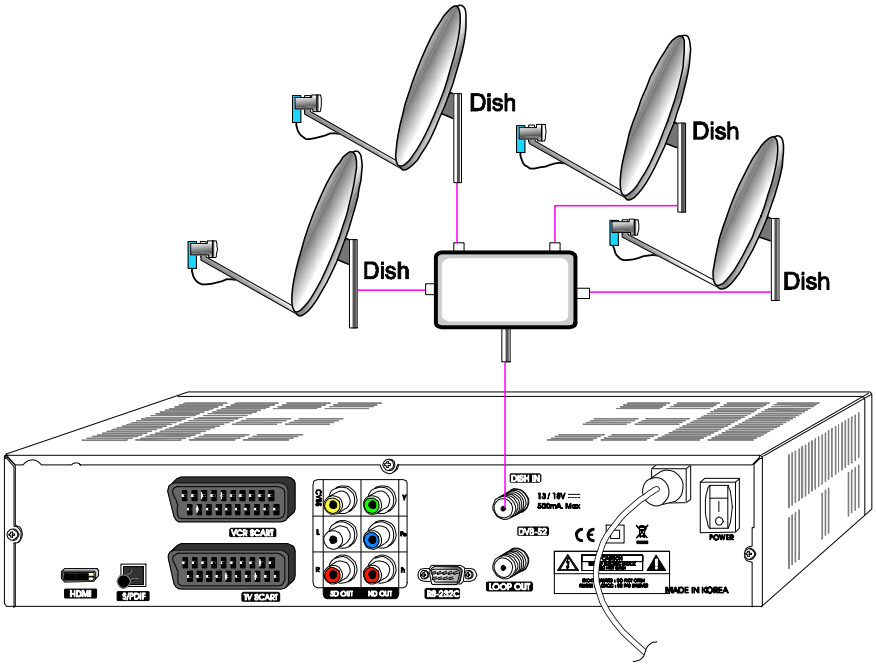
<Dish>

Connect the Satellite antenna cable to DISH IN.



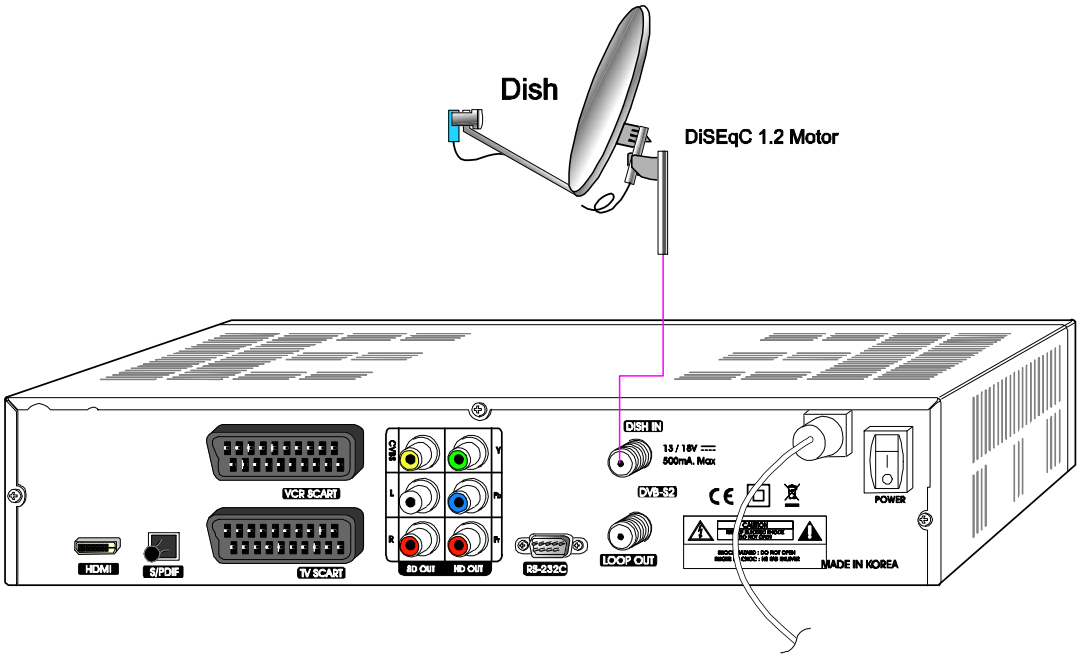
<Fixed Dishes Using a DiSEqC switch>

Connect the output of DiSEqC 1.0 to DISH IN of the receiver.



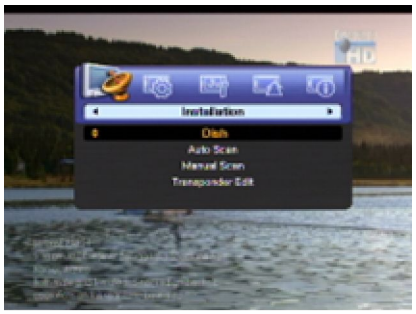
<Motorized Dish Using DiSEqC 1.2>

Connect the output of DiSEqC 1.2 to DISH IN of the receiver.



4. Menu Overview

4.1 Menu Instruction



Press the MENU button to display the main menu. You can select the sub menu using the ▲/▼/□/□ button. The selected sub menu becomes highlighted.
When you have selected the sub menu you want, press the OK button.
When you want to return to the previous menu, press the EXIT button.
When you want to return to the live screen, press the Menu button.

4.2 Menu Help

In the menu, short information is displayed at the bottom of the screen.

: Using ▲/▼ button.
: Using P+/P- button.
: Using □/□button.
: Using OK button.
: Using Opt, A/V+, Fav button.
: Using EXIT button.
: Numerical button or □ Button.

4.3 Menu Structure

In the menu, short information is displayed at the bottom of the screen.

Installation

Dish : Select the dish and LNB settings for channel search.

Auto Scan : Search the whole channel automatically without inputting the special parameters.

Manual Scan : Search the channel manually with user's inputting parameters.

Option

TV Output : Select the video or audio output.

Language : Select the display language, audio language, and subtitle language.

Time Setting : Setting current time.

Parental Control : Change the password and select the censorship classification

OSD Display : Setting OSD display time and transparency.

Channel

Sorting : Choose the channel sort type, such as by Transponder, Network, CAS.

Reservation : Reserving channels you want to record at your desired time.

Delete : Delete the channels such as Favorite, TV/Radio CAS, etc.

Advanced

Reset Factory Default : Restore the receiver to the default values.

Channel Upload : Transfer the programs from receiver to receiver or PC.

S/W Upload : Transfer the software from receiver to receiver or PC.

Status

Information : Check the version of satellite receiver.

5. Menu Operation

5.1 First Installation

You can install the receiver using First Installation for your convenience.

'First Installation' allow you to set your receiver using simple procedure.

1. Select the desired language using the ▲/▼ button.
2. Press the OK button to confirm and go to the next step.

1. Select the desired satellite using the ▲/▼ button.
2. Press the OK button to confirm and go to the next step.

1. Select LNB Type using the ▲/▼ button.
2. Press the OK button to confirm and go to the next step.

1. If you use a DiSEqC 1.0 switch, select DiSEqC option using the ▲/▼ button.
2. Press the OK button to confirm and go to the next step.

1. After all settings are done. press the button to start scanning.

If you want to know more detail description about each procedure, please refer to the following installation part in 5.2.

- Previous Step button : If you want to go to the previous step, press the **Opt** button and then you can reset options.
- Cancel and Exit button : If you want to skip 'First installation', press the **Exit** button.

5.2 Installation

5.2.1 Dish

1. Press the **Menu** button to display the main menu.
2. Press the OK button on the sub menu. The password pop-up window appears. All sub menus such as Dish, Auto Scan, Manual Scan, and Transponder Edit on the Installation are locked by password. The default password is "0000".

Use the ▲/▼ button, you can move upwards and downwards in this mode.
In any item, such as Dish, Satellite, Transponder, etc. if you want to check the detail view, use the □/□ button.

1. Press the □/□ button, the right screen shows the pre-selected 32 satellite lists.
2. Select the desired satellite, and press the OK button. Then change the satellite column will be by the desired Satellite name.

If you can't find the desired satellite, select any satellite and press the OK button.

1. Press the □/□ button to watch the satellite in the pre-programmed lists. Press the OK button to replace the Current satellite with the selected satellite.

1. Press the □/□ button, the right screen shows the transponder lists.
2. Press the OK button to select other transponder.

If you select one of the alternative satellite names, the transponder list is changed automatically according to the selected satellite name.

1. Select one of the LNB Power types using the □/□ button.

You can select LNB Power value as 13/18V normally or if the distance between antenna and receiver is further than 60m, you can select LNB Power value as 14/19V.

1. Select the LNB Type value.

If you have selected User Single or User Dual, enter LNB frequency value directly, and press the OK button. If you select LNB Type value as 9750/10600, 9750/10750 or User Dual, 22KHz value is fixed to auto mode, in other case you can select a value depending on usage of 22KHz tone switch box.

1. Select Switch Type if used.
2. If you use a DiSEqC 1.0 switch, select DiSEqC on the Switch Type.
3. Select one of the DiSEqC inputs from the Option.

1. Select Switch Type.
2. If you use a DiSEqC 1.1 switch, select SMATV on the Switch Type.
3. Enter a value with the numeric key. (950~2150).

1. Select Switch Type.
2. If you use a DiSEqC 1.2 motor, select the Motor on the Switch Type.
3. Change position of your Motor through the Option.

DiSEqC 1.2 Options

- Move West-East : Press the □/□ button to move the motor.
- Store Position : Press the OK button to save the current position.
- Go to Position : Press the OK button to move the motor to the stored position.
- Go to Reference : Press the OK button to move the motor to the 0 position.
- Set West Limit : Press the OK button to fix West limit.
- Set East Limit : Press the OK button to fix East limit.
- Enable Limit : Press the OK button to change the limit.

(Set West Limit & Set East Limit can be available with Disable Limit status)

1. Select Switch Type.
2. If you use a USALS motor, select from the Switch Type using the □/□ button.
3. Change position of your USALS motor through the Option.

- Go to Position : Press the OK button to move the motor to the position calculated by the
- longitude and latitude.

5.2.2 Auto Scan

You can search the channels offered by the satellite for which your antenna has been configured.

1. Select the satellite for scanning using ▲/▼ button and press the OK button.
2. The check mark indicates which satellite has been marked for scanning.

3. Press the □/□ button, select scan option using ▲/▼button, and press the OK button.
4. If you want to scan the satellite move to "Start Scan" and press the OK button.

1. Select Free+CAS or CAS using the ▲/▼/□/□ button.
2. Press the **Opt** button, CAS Pop-up window will appear.
3. Select the kind of CAS using the ▲/▼ button.
4. Press the OK button.
5. If you want to scan the satellite, move to "Start Scan" and press the OK button.

1. The left window shows TV channels and the right window shows Radio channels during the scanning process. White channel names are new channels downloaded to your receiver. Black channel names are already existing channels.

1. If you press the OK button when scanning for channels, pop-up window appears.
2. When you complete scanning for channels, a similar pop-up menu appears.
3. If you want to save the updated channels, select 'Yes'.

5.2.3 Manual Scan

1. Change to the specific values you want to scan.
2. Press the OK button to start the manual scan.

Dish : The target satellite for the manual scan.

Frequency : The frequency of the transponder you want to find manually.

Polarity : The polarity of the transponder you want to find.

Symbol Rate : The symbol rate of the transponder you want to find.

Modulation : The selection of modulation(DVB-S QPSK, DVB-S2 QPSK and DVB-S2 8PSK)

Pilot : The DVB-S2 parameter (DVB-S2 modulation mode only)

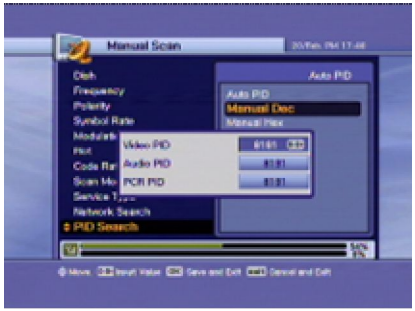
Code Rate : The code rate of the transponder you want to find.

Scan Mode : In the Free Channel mode, the receiver scans all channels without scrambled service.

Service Type : The selection of TV, Radio and TV&Radio.

Network Search : When enable, the receiver searches for more transponders using the network index table.

PID Search : Search using Auto PID, Manual Dec, Manual Hex.



1. When you select Manual Dec option, a pop-up menu appears.
2. Enter the value of Video PID, Audio PID and PCR PID with numeric keys.
3. Press the OK button to scan PIDs or press the EXIT button to make the pop-up menu disappeared.

1. When you select the Manual Hex option, a pop up menu appears.
2. Enter the value of Video PID, Audio PID and PCR PID with pop-up keypad.
3. Press 'Done' on the pop-up keypad to save PIDs or press the EXIT button to make the pop-up menu disappeared.

5.2.4 Transponder Edit

1. Press the Opt button to select the satellite in the left screen or the transponder in the right screen.
2. Select one of Delete, Edit or Add from the pop-up window. (The satellite and transponder cannot be deleted if the channels of the selected satellite have already been

Downloaded)

3. If you press the OK button, the current changing state will be saved and exit.

5.3 System Setting

5.3.1 A/V Output Setting

1. Select the TV output options using the ▲/▼/□/□ button.
2. If you press the OK button, the changed state will be saved and exit.

- TV Screen : Select the screen format of your TV.(4:3, 4:3 Letter Box, 16:9)
- Dolby Digital(DD) : Set the Channel to display the audio and video signal on your TV.

5.3.2 Language

1. Select the language options using the ▲/▼/□/□ button.
2. Press the OK button to change the selected language.

- Display : Change the language used in the OSD and Menus.
- Audio 1-2 : Change the language that you listen to audio in.
- Subtitle 1-2 : Change the language that you watch the subtitle in.

5.3.3 Time Setting

1. Setting current time using the ▲/▼/□/□ button.

2. If you press the OK button, current changing state will be saved and exit.

- Time Mode (TDT, USER).

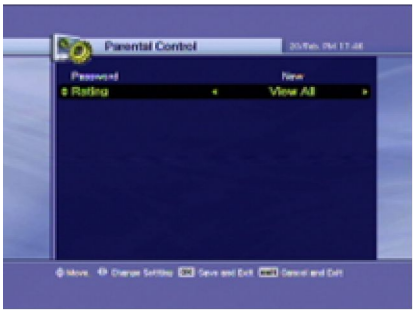
TDT : Receive the time from broadcaster.

USER : Set the time directly by user.

- Offset : Set the time difference between GMT and the local time.
- Day light saving : Day light saving will work only in case of 'Enable' mode.
- Start day : Day light saving start day.
- End day : Day light saving end day.

5.3.4 Security Setting

1. If you want to change the password, press the □ /□ button, following message requiring new password will be displayed.
2. Change the password into new one by numeric button.
3. To ensure your change, you are supposed to input a password once more.



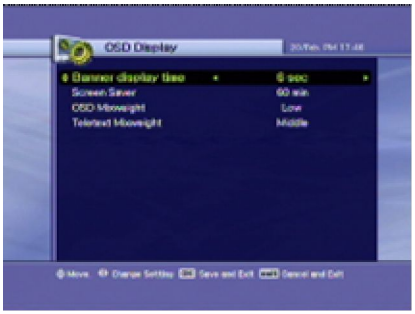
1. Select your desired rating level using the □/□ button.
2. Press the OK button to save and exit. Rating mode allows you to block channel according to the age level you have set.

- View All : All channels can be watched.
- 7 : Channels are blocked under the age of 7.
- 12 : Channels are blocked under the age of 12.
- 15 : Channels are blocked under the age of 15.
- 18 : Channels are blocked under the age of 18.

You have to enter password to watch the channels which is blocked by the age level.

5.3.5 OSD Setting

1. Select the options using the ▲/▼/□/□ button.
2. If you press the OK button, current changing state will be saved and exit.



- Banner display time : Banner will disappear after setting time passed.(1~9).
- Screen Saver : Screen Saver is a function to protect your TV in case Radio status or in Menu. (Disable, 5, 10, 20, 30, 60, 120 Minutes)
- OSD Mixweight : Select the OSD transparent type. (Low, Middle, High).

5.4 Channel

5.4.1 Sorting

1. Select Sorting Type using the □/□ button.
2. If you press the OK button, current changing state will be Saved and exit.

- Transponder : Channels are sorted into transponder order..
- Network : Channels are sorted into service provider order.
- CAS : Channels are sorted into Scramble channels and Free channels order.

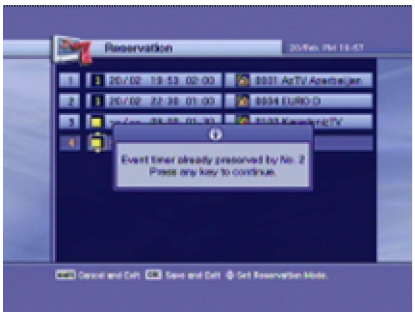
5.4.2 Reservation

You can reserve a Channel at your desired time. In this mode, you can reserve channels up to 8.

1. Press the Opt button to edit the reserved channel. And then use the ▲/▼/□/□ button to the detail setting for your reservation.

1. To add more, press the A/V+ button. Press the Fav button to delete the reservation.
2. After all settings are done, press the button to save and exit.

If it is duplicated with the time zone that was already registered at a reservation list, the alarm message appears which it is not able to register.
In this case, you must register a reservation for other time zone.



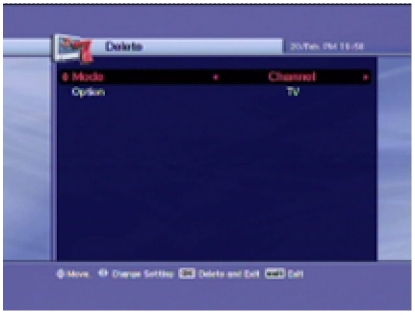
- Just one time action (After action was done, event will be deleted on the list.)
- Action execution in weekday
- Action execution in weekend
- Action execution weekly
- Action execution in every day

- : Radio channel(FTA, CI)
- : Radio channel(PVR only)
- : TV channel(FTA, CI)
- : TV channel(PVR only)

5.4.3 Delete

You can delete channels. You can select not only Mode such as Channel and Favorite, but also Option such as TV, Radio and etc.

1. Select the Mode and Option you want to delete channels using the ▲/▼/□/□ button.
2. Press the OK button to delete and exit.



5.5 Advanced

5.5.1 Reset Factory Default

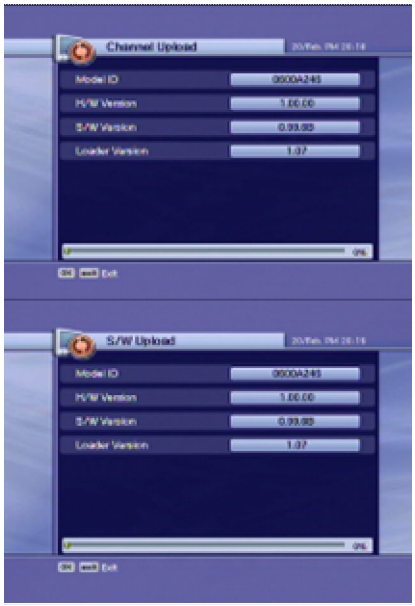
1. If you want to change the set into the default values, press the OK button. The following confirmation window will appear.
2. If you select 'Yes', the system will be reset to the primitive state like new receiver.

5.5.2 Channel Upload

1. Connect the receiver with other receiver or PC through RS-232 cable.
2. For the target receiver, turn the AC Power off, then turn on again.
3. You can watch the transfer status of software.

5.5.3 S/W Upload

1. Connect the receiver with other receiver or PC through RS-232 cable.
2. For the target receiver, turn the AC Power off, then turn on again.
3. You can watch the transfer status of software.



5.6 Status

5.6.1 System Information

1. You can watch the system information such as Model ID, Hardware version, Software version, and Loader version.

6. Viewing General Information

6.1 Banner Information

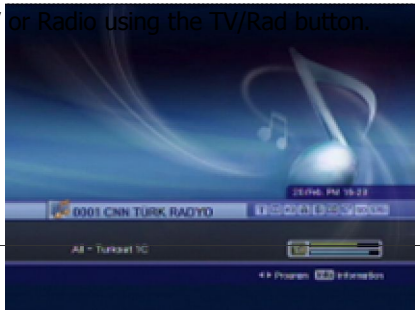
Detailed Event Information Current Time

1. Whenever you press the INFO button, the banner information window appears for a few seconds.

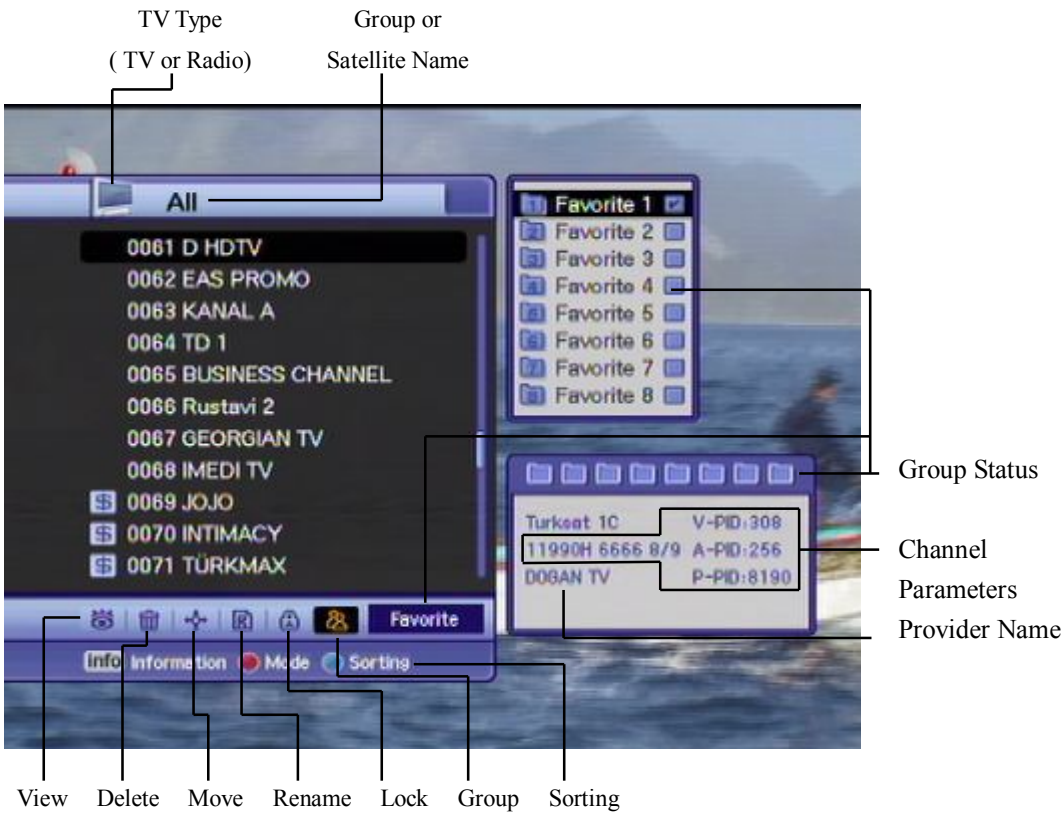
1. If you press the INFO button again on the banner, the detail EPG window appears.
2. If you press the button, information and EPG window will disappear.
3. Press the P+- button and then you can change the channel.
4. If '□' exists on the Banner, press the □/□ button and then you can watch the next EPG.

6.2 TV & Radio changing

While watching TV or listening to Radio, you can select TV or Radio using the TV/Rad button.



6.3 TV or Radio Channel Lists



6.3.1 Watching Mode

While watching TV or listening to Radio, you can watch the channel list. Press the OK button to display the channel list. You can watch several icons at the bottom of the channel list. Each icon has a special and convenient function for user. If you want to change the mode, press the Opt button to go to the desired icon.

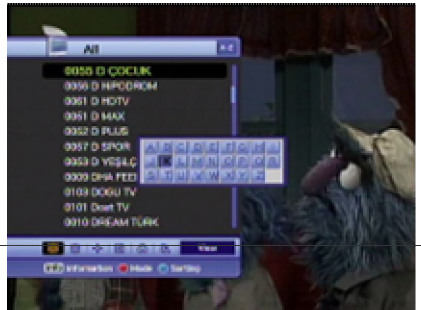
1. Press the OK button or A-Z button. If you want to view the sorted channel list, press the A-Z button.
2. Press the ▲/▼ button to move the cursor.
3. Press the OK button to watch the desired channel.
4. If you want to hide the channel list, press the button.

- When you want to sort the channels, press the A-Z button.
- When you want to change the TV/Radio mode, press the TV/Rad button.
- When you want to watch the next or previous channel page, press the P+- button.

1. Press the INFO button to watch the information for a selected channel.
2. Press the EXIT button to hide the information.

1. If you know the correct channel-number to watch, press the number using the numeric button.

1. If you want to go Alphabetic move, you must change the channel list to the sorted status. To become the sorted status, press the A-Z button on the channel list or on the Live screen.
2. Press the numeric button. Then Alphabetic Pad



will appear.

3. You can select the Alphabet using the numeric key(1-9)/▲/▼/□/□ button.
4. Press the OK button. If the selected channel by user input-letter not exists, there will be any change.

6.3.2 Delete Mode

1. Select the Delete Icon using the Opt button.
2. Select channel you want to delete using the ▲/▼button. Press the OK button. Checked sign will be marked on the right side of the channel name.
3. Press the **EXIT** button to save and exit.

6.3.3 Move Mode

1. Select the Move Icon using the Opt button.
2. Select the channel which will be located in other position.
3. Press the OK button, and then a sign which indicates "move" will be marked on the right side of the channel name.
4. Set the new position using the ▲/▼ button.
5. If you want to complete moving channel, press the OK button. Then "move" sign will disappear on the right side of the channel name.
6. Press the **EXIT** button to save and exit.

6.3.4 Rename Mode

1. Select Rename Icon using the Opt button.
2. Select the channel to rename and press the OK button. And then a small editing name window will be displayed.
3. You can write each letter of the channel

name using the ▲/▼/□/□ button and the OK button.

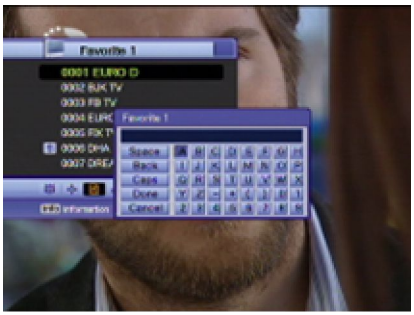
4. After renaming is done, select Done tab and then press the OK button.
5. Press the **EXIT** button to exit.

You can change the Favorite group name.

1. Select the desired group.
2. Change the name of group according to above procedures.

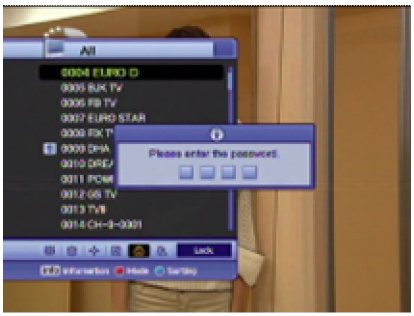
<Remark>

It is impossible that Delete & Group function can be changed in grouping mode.



- Space : Write between two characters.
- Back : Delete characters.
- Caps : Change between caps and lower case letter.
- Done : To save the change.
- Cancel : Exit rename mode.

6.3.5 Lock Mode



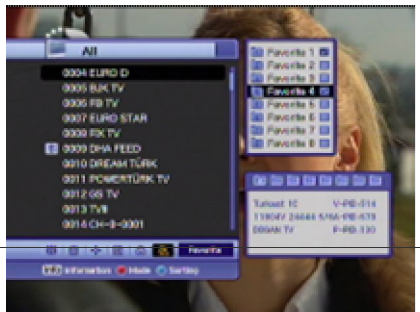
1. Select Lock Icon using the Opt button.
2. Select the channel to be locked and press the OK button.
3. Set the password. Locking mark will appear on the left side of the Channel name. To cancel it, just press the OK button.
4. Press the **EXIT** button to save and exit.

6.3.6 Group Mode

You can make the group up to the 8th group. It can accommodate 100 Channels in one group.

So you can get 800 favorite channels.

1. Select Group Icon using the Opt button.
2. Select the channels that you want to make



favorite channel list.

3. Press the OK button, and then a small favorite Window will appear on the right side of the screen.
4. Choose the group number using the ▲/▼ button and press the OK button. To cancel it, just press the OK button again.
5. If you want to select other channel in current group, press the □/□ button. And then highlighted channel will be showed on the channel list.
6. Press the OK button to set the group with selected group using the □/□ button.
7. Press the **EXIT** button to save and exit.

6.4 Option

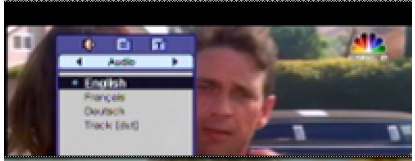
While watching TV or listening to Radio, press the Opt button. You can watch small pop-up window. You can select a option.(Audio Language, Teletext Language, Subtitle Language) If you want to change the option mode, press the □/□ button.

6.4.1 Audio Language

1. Select the 'Audio' using the □/□ button.
2. Press the ▲/▼ button to select a desired audio language.
3. Press the OK button to change the audio language.

6.4.2 Sub-Title

1. Select the 'SubTitle' using the □/□ button.
2. Press the ▲/▼ button to select enable.
3. Press the OK button.
4. You can watch the Subtitle contents in the language if it is available.



6.4.3 Teleteks

1. Select the 'SubTitle' using the □/□ button.
2. Press the ▲/▼ button to select enable.
3. Press the OK button.
4. You can watch the Subtitle contents in the language if it is available.

6.5 A/V+

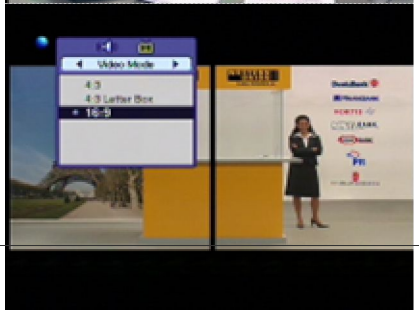
While watching TV or listening to Radio, press the A/V+ button. You can watch small pop-up window. You can select a option.(Audio Mode, Video Mode) If you want to change the option mode, press the □/□ button.

6.5.1 Audio Mode

1. Select the 'Audio Mode' using the □/□ button.
2. Press the ▲/▼ button to set the output direction for speakers.
   (STEREO, LEFT, RIGHT, JOINT)
3. Press the OK button to save and exit.

6.5.2 Video Mode

1. Select the 'Video Mode' using the □/□ button.
2. Press the ▲/▼ button to set screen format of



your TV.

3. Press the OK button to save and exit.

6.6 Fav

While watching TV or listening to Radio, press the Fav button. You can watch small pop-up window. You can select a Favorite group.

6.6.1 Satellite

1. Select the 'Satellite' using the □/□ button.
2. Press the ▲/▼ button to select a Satellite.
3. Press the OK button, then you can watch the channel list of selected Satellite.

6.6.2 Favorite

1. Select the 'Favorite' using the □/□ button.
2. Press the ▲/▼ button to select a group.
3. Press the OK button, then you can watch the channel list of selected group.

6.7 A-Z

While watching TV or listening to Radio, press the A-Z button. You can watch sorted channel list.

6.8 EPG

Press the EPG button and the electronic channel guide appears if applicable.
Time intervals are arranged in a row and Channel lists are shown in a column.

6.8.1 EPG Information

1. Press the □/□ button to change time interval.
2. Press the ▲/▼ button to watch the guide about the channel, and then press the INFO button, the detail EPG window will appear.
3. Press the OK button to exit.

- Press the Opt button to reserve channels with event. If you want to know the detail Description about reservation, refer to the reservation description in chapter 5.4.2.
- Press the INFO button to watch the detail EPG.

A.1 Troubleshooting

There may be various reasons behind receiver problems. Check the receiver according to the procedures described below.

If you can't solve your problem even after following the troubleshooting procedures, please contact the dealer. Do not open the receiver cover. It may cause a dangerous situation.

Symptom	Cause	Remedy
The front panel doesn't display any message.	The power cord is not plugged in.	Check that the power cable is plugged in to the wall outlet.
No picture or sound.	Wrong connection of the Audio/Video output of the receiver to TV.	Connect the Audio/Video output of the receiver to TV correctly.
	Wrong connection of the antenna.	Connect the antennal cable correctly.
	No or Bad signal message appears.	Check other device connected between Antenna and the receiver, or adjust the antenna position.

	Audio muting	Press the MUTE button
	TV Power	Turn TV on.
No picture.	The receiver can't receive the signal.	Check the antenna cable, replace the cable, or connect the cable to the receiver tightly.
	Incorrect values of some tuner parameters.	Set the values of tuner parameters correctly. Refer to the Installation menu.
No or bad signal.	The UHF Antenna is not Pointing.	Adjust the antenna.
	Signal too strong.	Connect the signal attenuator to the signal input.
	Antenna is too small.	Change to a larger antenna.
The remote controller does not operate.	The batteries of the remote controller are not inserted or exhausted.	Check whether the batteries are inserted correctly in your remote controller. Check and replace the batteries of the remote controller.
Poor picture quality.	Signal loss cable.	Change the antenna power in Antenna menu.
Less channels in scanning.		

A.2 Technical Specifications

1. Tuner & Demodulator

Parameter	Specifications
Input Frequency Range	950MHz to 2150 Mhz
RF Input Signal Level	-25 to -65dBm
RF Impedance	75Ω
IF Bandwidth	55MHz/8MHz(Under 5Msps)
LNB Power	13/18DC, 14/19V +/-5%, 0.5Amax, 0.8Apeak overload protected
LNB Tone Switch	22kHz +/-2kHz, 0.6Vpp +/-0.2V
DiSEqC Control	Version 1.2, Tone burst A/B
Demodulation	QPSK, QAM256, VSB, 64QAM
Symbol Rate	1~45Msps/SCPC, MCPC

2. MPEG

Parameter	Specifications
Transport Stream	MPEG-2 ISO/IEC 13818 Transport Stream Specification
Input Rate	Max.15Mbit/s
Video	MPEG-2 MP@ML
Audio	MPEG-1/2 Audio Layer 1,2
Aspect Ratio	4:3, 16:9
Video Resolution	720x480p(PAL), 720x480i(NTSC), 1080i
Audio Mode	Stereo, Dual channel, Joint stereo, Mono
Audio Sampling Frequency	32/44.1/48kHz

3. Connector

Port	Specifications
LNB IF input	F type, IEC 169-24 Female
LNB IF Loop-through Output	F type, IEC 169-24 Female
S-VHS	Y, C
RCA	Stereo,CVBS
Component	Y,Pb,Pr
SPDIF	Fiber-Optic connection(Digital Audio Output)
Serial Port	RS232C D-sub male type

4. Power Supply

Parameter	Specifications
Input Voltage	90~260VAC(SMPS)
Power Consumption	Max. 27W
Weight	Appr. 1.5KG
Operating Temperature	0'C~40'C
Storage Temperature	-40'C~65'C

A.3 Glossary of Terms

DiSEqC
Digital Satellite Equipment Control.

EPG
Electronic Program Guide. Software that enables viewers to navigate easily among the large selection of channels provided by the digital technology and choose the service they desire.

FEC
Forward Error Correction. Correction of faulty bits in the received signal.

LNB(Low-Noise Block converter)
The LNB is an electronic unit mounted on the satellite dish. It receives the signals reflected by the dish and converts them to signals that can be used by Satellite receiver.

Parental control
A feature that allows parents to lock programs that they consider unsuitable for their children. A locked channel or program can only be unlocked with the password.

PIN code
Personal Identification Number. A four-digit code that is used for locking/unlocking channels and programs, as in the parental control feature.

Polarization
Polarization allows several programmes to be fitted into the same frequency band.
The signals from a satellite are transmitted either with linear (vertical or horizontal) polarization or circular (right or left) polarization.

RS 232
Serial communication standard data port.

Satellite dish
A dish-shaped antenna to receive signals from a satellite. The dish focuses the signals into the LNB.

Scrambled satellite TV programme

Some satellite TV programmes are transmitted in scrambled form. A smartcard, and possibly a CA module is needed to view such programmes.

Symbol rate

Size of the digital package transmissi